Paper No. 26

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

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Ex parte PAUL W. DENT

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Appeal No. 2000-2261
Application 08/730,670

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ON BRIEF

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Before THOMAS, FLEMING and SAADAT, Administrative Patent Judges.

THOMAS, Administrative Patent Judge.

DECISION ON APPEAL

Appellant has appealed to the Board from the examiner's final rejection of claims 1, 2, 6, 7, 26, 27 and 30. The examiner has indicated the allowability of claims 13-25, and has objected to claims 3-5, 8-12, 28, 29 and 31 indicating their allowability if rewritten in independent form including all the limitations of the base claim and any intervening claims.

Representative claim 1 is reproduced below:

1. A radio transmitter/receiver for selectively transmitted digitally modulated signals in a digital mode or analog modulated signals in an analog mod comprising:

digital signal processing means having an input for receiving an information signal, a first output for supplying an In-phase modulating signal I and a second output for supplying a Quadrature modulating signal Q;

quadrature modulation means coupled to the first and second outputs for digitally modulating a carrier frequency in the digital mode to produce a digitally modulated signal; and

analog modulation means coupled to the first and second output for generating an analog modulation of a carrier frequency in the analog mode to produce an analog modulated signal, wherein said In-phase modulating signal I and said Quadrature modulating signal Q bypass said quadrature modulation means in order to produce said analog modulated signal.

The following references are relied on by the examiner:

Nonami	5,251,232	Oct. 5, 1993
Denheyer et al. (Denheyer)	5,642,378	June 24, 1997 (filing date Nov. 17, 1994)

As a result of more recent prosecution between the parties in this application after the final rejection, the following issues remain for our consideration. Claims 1, 7, 26, 27 and 30 stand rejected under 35 U.S.C. § 102(e) as being anticipated by Denheyer. Lastly, claims 1, 2, 6 and 7 stand rejected under 35 U.S.C. § 103. As evidence of obviousness, the examiner relies upon Nonami in view of Denheyer.

Rather than repeat the positions of the appellant and the examiner, reference is made to the briefs and the answer for the respective details thereof.

OPINION

We reverse the rejection of claims 1, 7, 26, 27 and 30 under 35 U.S.C. § 102 as being anticipated by Denheyer. We are in general agreement with the positions set forth by appellant in the brief and reply brief as to this issue. This reversal applies to our consideration of both the Figure 1 and Figure 3 embodiments in Denheyer.

Moreover specifically, although prior art Figure 1 of Denheyer shows a digital signal processor 10 and IQ or digital modulator 12 along with an analog or FM modulator 26, all of which are required by independent claim 1 on appeal, the claimed requirement of the analog modulation means receiving the I and Q outputs from the digital signal processor is not shown in Figure 1 and is also not taught with respect to the discussion of this figure at column 1 of Denheyer. Figure 1 only shows that the DSP 10 sends the respective IQ signals to the IQ modulator 12 and not

to the analog FM circuitry 22. This rejection of claim 1 must be reversed even though it appears to us that the artisan would understand the teaching at column 1, lines 25-28 that there is a bypass operation performed in the circuitry of Figure 1 of Denheyer in accordance with the requirement at the end of claim 1 on appeal.

The examiner appears to rely upon inherency (Answer, page 4) that the DSP 10 in Figure 1 of Denheyer would propagate the I and Q signals according to the unlabeled bidirectional connection to the analog FM circuitry 22 in the same manner it does so with respect to the I and Q modulator 12. This is simply not necessarily the case. Therefore, to sustain the examiner's rejection, we would need to resort to speculation or unfounded assumptions to supply the factual deficiencies in the record before us. This we decline to do. Note the guidance provided by In re Warner, 379 F.2d 1011, 1017, 154 USPQ 173, 178 (CCPA 1967), cert. denied, 389 U.S. 1057 (1968), reh'g denied, 390 U.S. 1000 (1968). Here, simply put, more evidence is needed to convince us. To the extent the examiner's position my be viewed as being based upon inherency, inherency may not be established by

probabilities or possibilities since inherency requires a teaching must be necessarily present in the applied prior art. Continental Can Co. v. Monsanto Co., 948 F.2d 1264, 1269, 20 USPQ2d 1746, 1749 (Fed. Cir. 1991) relying on In re Oelrich, 666 F.2d 578, 581, 212 USPQ 323, 326 (CCPA 1981). These findings are consistent with a more recent case from our reviewing court, In re Robertson, 169 F.3d 743, 745, 49 USPQ2d 1949, 1950-51 (Fed. Cir. 1999).

For similar reasons we reverse the rejection of independent claims 26 and 30. As noted in the discussion at pages 8 and 9 of the principal brief on appeal, these claims are respective apparatus and method claims setting forth essentially similar subject matter. We must reverse the rejection of independent claim 27 and corresponding independent claim 30 for the same reasons as for our reversal of claim 1 according to the Figure 1 showing in Denheyer, since this figure also does not teach the more specific recitation of the selecting unit operating in the alternative with a combining unit to generate the "modulating waveform" required by the analog modulator at the end of each of these respective claims on appeal.

At least with respect to the Figure 1, prior art embodiment, in Denheyer we reverse the rejection of independent claim 1 and its respective dependent claims 7 and 26, as well as the rejection of the more specific features in independent claims 27 and 30.

In considering the Figure 3 embodiment, the actual contribution of Denheyer to the art, we also reach a similar conclusion. As noted by appellant at pages 9-12 of the principal brief on appeal, the flow chart Figure 3 reflects the operation of the circuit in Figure 2 of Denheyer. As is very clear from the corresponding teachings of these figures at columns 3-5, we note the specific discussion in the first half of column 5 that only a single modulator 64 shown in Figure 2 is provided to modulate both analog and digital input signals. Thus, we agree with appellant's arguments in the noted pages of the principal brief on appeal that Figure 3 does not disclose an analog modulation means separate from the claimed quadrature modulating means of independent claim 1 on appeal. Correspondingly, there can therefore be no teaching of the required bypass operation set forth in independent claim 1 on appeal according to the Figures 2 and 3 showings in Denheyer.

We must also reverse the rejection of independent claims 27 and 30 on appeal for similar reasons since each of these claims also require both a quadrature modulator and an analog modulator. Additionally, there is no showing in Figures 2 and 3 and no teaching or suggestion at columns 3 through 5 of Denheyer of the claimed selecting unit operating in the alternative to the claimed combining unit, both of which respectively produce "a modulating waveform" feeding the analog modulator at the end of each these respective independent claims.

Therefore, since we reverse the rejection of independent claim 1 on appeal, we must also reverse the rejection of its respective dependent claims 7 and 26, as well as independent claims 27 and 30 according to the Figure 3 embodiment of Denheyer. As such, we have reversed the rejection of all these claims based upon our consideration of the Figures 1 through 3 embodiments in Denheyer.

Lastly, we turn to the rejection of claims 1, 2, 6 and 7 under 35 U.S.C. § 103 as being obvious over Nonami in view of Denheyer. We also reverse the rejection of independent claim 1 and therefore its dependent claims 2, 6 and 7.

Our first reason for this reversal is that the examiner's statement of the rejection expressed at pages 4 and 5 of the answer fails to set forth a prima facie of obviousness. The examiner's reasoning that it would have been obvious for the artisan to have replaced the DSP in Nonami with a corresponding structure in Denheyer "since it does not show any new or unexpected result" essentially begs the question within 35 U.S.C. § 103. The examiner has provided no motivation or reason for the combinability but only a presumptuous, conclusory result. The responsive arguments portion of the answer at pages 5 and 6 thereof fails to address in any manner appellant's arguments as to this rejection set forth beginning at page 12 of the principal brief on appeal.

We also reverse this rejection even if we were to assume the best position of the examiner based upon the actual teachings and suggestions of Nonami and Denheyer. First, as to the Figures 2-3 embodiment of Denheyer, our earlier discussion in this opinion indicates that only one modulator and not the required separate quadrature and analog modulation means required of claim 1 on appeal are taught in Figures 2-3. As to Nonami, the prior art

Figure 3 showing does not indicate that the DSP 4 feeds the analog or FM modulator 10, even though two modulators, this one and the digital modulator 6, are shown in this figure. On the other hand, Nonami's embodiments in Figures 1 and 2 show a common DSP processor 4 feeding in a parallel manner a digital modulator 6 and the analog modulator 10.

According to the teachings of Nonami, the DSP 4 feeds various types of signal outputs to these respective modulators. The details of these signals fed to modulators 6 and 10 are not set forth in Nonami as recognized by the examiner's reasoning for the rejection at the top of page 5 of the answer. Because Nonami does not detail the nature of the signals outputted from the DSP signal processor 4, it would have been prima facie obvious to the artisan to look to the teachings of Denheyer to ascertain the nature of the types of signals outputted from DSP processors. Notwithstanding the specific showings in Figures 2-3 of Denheyer that the DSP processor outputs I and Q signals respectively, such is well known in the art anyway because of appellant's recognition thereof at pages 1 and 2 of the specification as filed. Similarly, because the details of the Figures 1 and 2 embodiments of Nonami indicate that the common DSP processor 4

feeds both modulators 6 and 10, it would have been obvious to do so according to the common teachings of both references, even though, as indicated earlier in this opinion with respect to the rejection of the claims under 35 U.S.C. § 102, the DSP processor 10 in the prior art Figure 1 of Denheyer does not specifically teach feeding the I and Q signals to the analog processor 22.

Nevertheless, the rejection of independent claim 1 under 35 U.S.C. § 103 must be reversed because the combination of Nonami and Denheyer does not provide the features of the wherein clause stating "said In-phase modulating signal I and said Quadrature modulating signal Q bypass said quadrature modulation means in order to produce said analog modulated signal" set forth at the end of independent claim 1 on appeal. This feature is derived from specification page 8, lines 9-12 as to the showing in Figure 1 of appellant's disclosed invention and the corresponding explicit teaching at page 11, lines 3-5 relative to the Figure 2 embodiment. Because the Figures 1 and 2 embodiments of Nonami specifically teach the DSP signal processor 4 feeding the respective modulators 6 and 10 in parallel, there is no teaching of any bypass operation in Nonami. (Column 4, lines 65-68). Correspondingly, Figures 2-3 of Denheyer also do not indicate this bypass feature.

Since we have reversed the rejection of various claims under 35 U.S.C. § 102 and the rejection of certain claims under 35 U.S.C. § 103, the decision of the examiner is reversed.

REVERSED

James D. Thomas Administrative Patent Judge	)	
Michael R. Fleming Administrative Patent Judge	)	BOARD OF PATENT APPEALS AND INTERFERENCES
Mahshid D. Saadat Administrative Patent Judge	)	

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